

MISSOURI. Conservationist

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[NOTE TO OUR READERS]

Opportunities for Every Citizen

Every citizen should have the opportunity to enjoy Missouri's natural resources and the outdoors. Making the outdoors accessible and providing opportunities for all citizens is an important objective of

the Department. It's the light in someone's eyes, the smiles on faces, or the simple knowledge that people are enjoying some facet of Missouri's outstanding outdoor opportunities that spur Department employees to increase accessibility.

The Department has made a longtime commitment to increasing accessibility to Missouri's Outdoors through paved hiking trails at nature centers, fishing docks accessible for everyone, paved fishing jetties, boat ramps designed for disabled accessibility, accessible shooting range facilities, and waterfowl hunting and viewing blinds on large waterfowl conservation areas.

Special programs like a children's camp for the hearing impaired, Wounded Warrior events, Hunting for Heroes programs, special programs for kids with disabilities, and senior fishing programs, are just a few examples of events supported by or put on by Department staff.

The *Wildlife Code of Missouri* offers exemptions for persons with disabilities on permits and methods. In addition, Missouri resident hunters with disabilities can receive automatic inclusion into many of Missouri's managed hunts. Special fishing permits are granted for supervised groups in rehabilitation programs or therapy.

One of the newest Department projects is a disabled-accessible fishing ramp and platform at Bennett Spring. The Missouri Conservation Heritage Foundation led a fundraising challenge and raised more than \$50,000 from private citizens and businesses to increase accessibility at this location.

The Department works with cities, counties, and other entities around Missouri to provide close-to-home fishing opportunities. The Community Assistance Program provides many disabled-accessible opportunities for anglers, boaters, and nature enthusiasts at lake and stream areas in their hometowns.

Many conservation areas like Mark Youngdahl in St. Joseph, Burr Oak Woods in Kansas City, Columbia Bottoms in St. Louis, the Cape Girardeau Nature Center in southeast Missouri, and the Andy Dalton Shooting Range and



Education Center in southwest Missouri all offer wonderful opportunities to experience the outdoors. Whether it's gazing at the confluence of the Missouri and Mississippi rivers, shooting a firearm at one of the ranges, or enjoying an outdoor hike, Missouri's natural resources await and abound with opportunities.

All Missouri citizens should have the opportunity to feel a fish fighting on the end of their line; enjoy the outdoors through harvesting wildlife such as deer, turkey, or doves; to simply get outside in nature and marvel at the sights and sounds of our natural world; and to appreciate the entire scope of Missouri's outstanding outdoor opportunities.

The Department produces a *Disabled-Accessible Outdoors* booklet that lists and highlights facilities that offer accessible opportunities throughout the state. To order a free copy, send your name and address to pubstaff@mdc.mo.gov, or mail your request to Publications, Missouri Department of Conservation, PO Box 180, Jefferson City, MO 65102-0180. For additional information on Missouri's disabled-accessible outdoors go to mdc.mo.gov/node/15283.

Tim Ripperger, deputy director

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100mm macro lens • f/2.8

1/200 sec • ISO 1600

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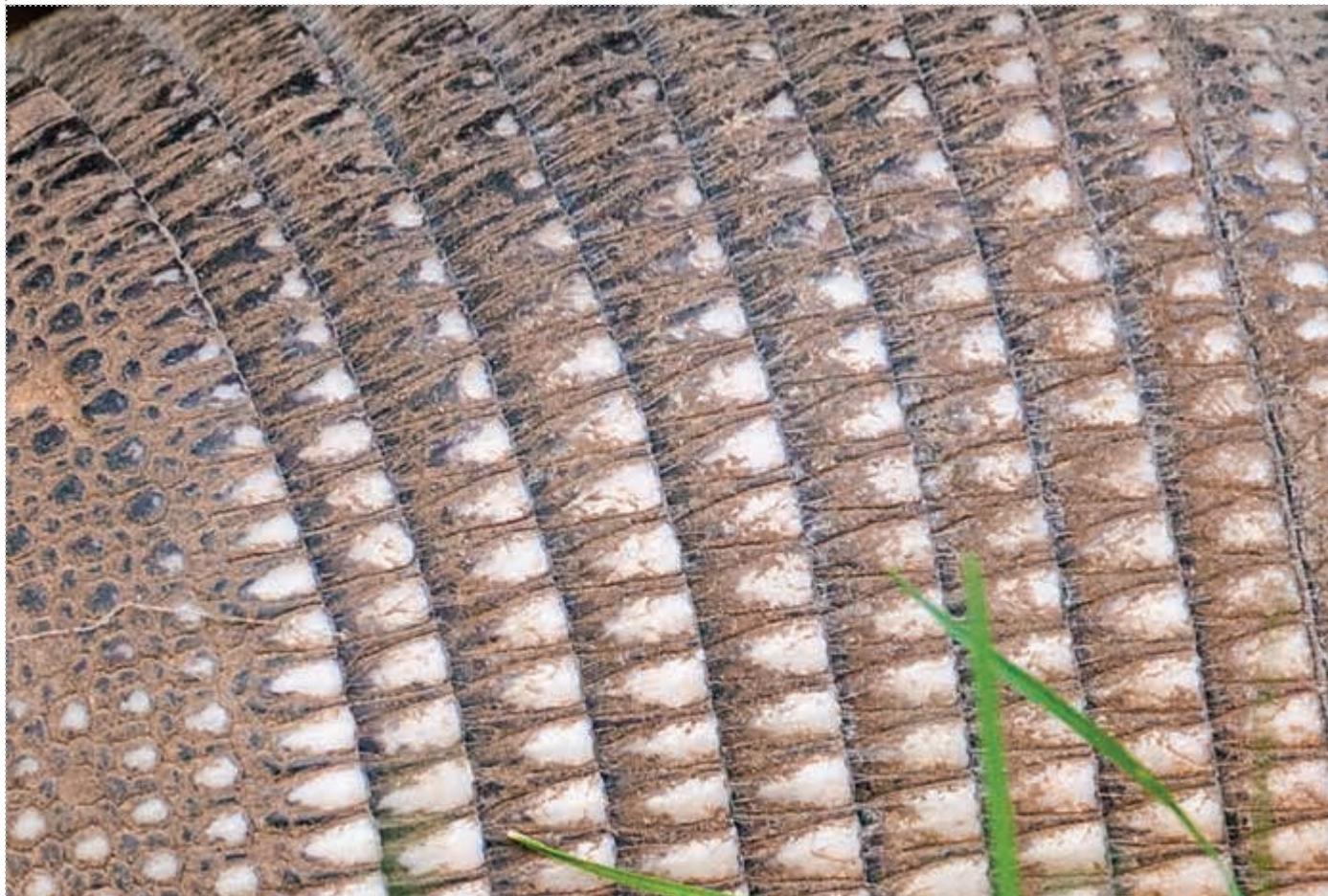
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WHAT IS IT?

Our photographers have been busy exploring the intricacies of the Missouri outdoors. See if you can guess this month's natural wonder. The answer is revealed on Page 8.



LETTERS

Submissions reflect readers' opinions and might be edited for length and clarity.

NATURE'S LIBRARY

The May issue was the best of all the bests. Thank you. I was especially taken with Jim Low's *Browsing Nature's Library* [Page 15] and wondered if perhaps your gift shop has a "coffee-table style" book covering each of Missouri's conservation areas, written and pictured in the same style. Such a book would make a lovely gift for those who do not live in Missouri.

Back to Jim Low's enticing article, I noticed that quite a few of those segments mention fires. I am sure Missouri has fires, as any forested state will have, but I've never actually known of one. Are these fires that Jim Low mentions controlled burns? Or are we having that many natural (or human-made) fires?

Hazel M. White, via Internet

Ombudsman's Note: We do have a for-sale publication that is a guide to 50 Missouri Natural Areas. It is available

through our Nature Shop at mdcnature-shop.com or by calling 877-521-8632.

The prescribed fires that Jim Low mentioned are prescribed burns that are intentionally set for habitat management. It is too dangerous to let most natural fires burn in Missouri today due to the property damage that can result. Prior to European settlement of the Midwest, Native Americans used fire as a management tool and natural (lightning-set) fires could sweep over large areas. Many of our natural communities are fire dependent, so we continue to maintain that important element in protecting our native biodiversity when fires can be used safely. —Tim E. Smith

XPLOR READING

We wanted to let you know how much the families in our READ from the START programs

are enjoying the issue of *Xplor* magazine that they receive at the program. Our facilitators have reported that the parents and caregivers are excited to learn about the magazine and happy to hear that they can subscribe to it for free! Here is a recent anecdote from one of our facilitators:

"I passed out materials and showed the parents how they could create their own books using zip lock bags. I then passed out copies of *Xplor* magazine. I told them they could subscribe to the magazine for free and, after they looked through it and read it with their children, the children could cut out photos to create their own animal books."

The magazines are popular with the dads who attend our programs. Many of them comment that they look forward to connecting nature and outdoor activities with literacy.

Thank you so much for supplying us with these copies so that we can introduce families to this great resource.

*Julie Douglas, family programs director
Missouri Humanities Council, St. Louis*

Editors' Note: Xplor is the Department of Conservation's award-winning magazine for children. See Page 3 for details.

CORRECTION

The May "News and Events" article, *Pallid Sturgeon Spawning Documented* [Page 7], incorrectly stated that a newly hatched pallid sturgeon was found and identified through genetic testing. The newly hatched fish was a shovelnose sturgeon, not a pallid sturgeon, and was captured through a long-term, collaborative research effort with the U.S. Geological Survey. The article also mistakenly credited the Federal Aid in Sport Fish Restoration Program for funding pallid sturgeon restoration. Sport Fish Restoration funds have not been used to support pallid sturgeon recovery efforts. The article should have stated that the Missouri River Recovery Program, administered by the U.S. Army Corps of Engineers, has funded most of the Department's pallid sturgeon propagation and assessment efforts for more than a decade. The *Conservationist* regrets these errors and omissions.

Reader Photo

GESUNDHEIT

Holly Goyea captured this picture of a hummingbird "sneezing" in her backyard garden in Cedar Hill. "The bird has flower mites and is trying to get them off," explains Department of Conservation ornithologist Brad Jacobs. "The flower mites consume nectar and, when they are full, they quickly run up the bill of a visiting hummingbird. The hummer sneezes to try to keep them from catching a ride, but the mites are very fast. They hold on for the flight to the next flower, where they quickly run down the bill and jump off onto this new location." Goyea loves photography and has feeders and gardens to attract wildlife to her yard, which give her lots of opportunities to capture great photos.



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KIDS' MAGAZINE

Six times a year we'll bring you eye-popping art, photos, and stories about Missouri's coolest critters, niftiest natural places, liveliest outdoor activities, and people who've made a living in the wild. Come outside with us and XPLOR!

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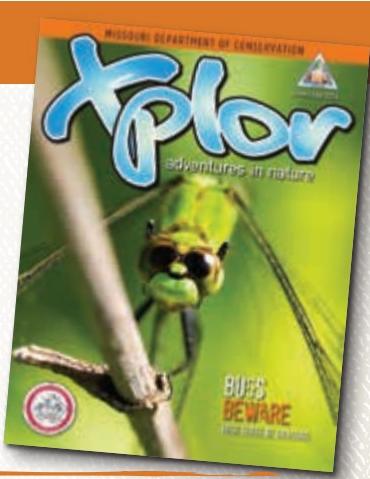
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Agent Notes

Perfect Float Streams

WHEN MOST PEOPLE think of floating a river in Missouri, their mind takes them to a clear, rocky-bottomed Ozark stream. However, any river or stream in Missouri that is large enough to float a canoe or boat is the perfect stream to float. Those of us in north Missouri, who don't have clear-water streams, can have just as much fun floating and fishing in a sandy or muddy river.

I've talked to several people in north Missouri who have driven for hours to float an Ozark stream, but they have never floated the river in their own backyard. Although the fish species and fishing methods are different from an Ozark stream, there's nothing better than wading to the next log to cast a line for channel catfish.

Before heading out on your float, there are a few things to keep in mind. Always know the fishing regulations for the river or stream you are fishing. Respect the landowners along the streams and rivers you are floating. Respect the river or stream by bringing a trash bag with you, not only for your trash, but other trash you might find along the way. And finally, respect the other users on the river or stream.

There are many public access points to most of Missouri's rivers and streams. These accesses, as well as all of Missouri's Conservation Areas, can be found on our website at mdc.mo.gov.

Jeff Berti is the conservation agent in Grundy County. If you would like to contact the agent for your county, phone your regional conservation office listed on Page 3.



HUNTING AND FISHING CALENDAR

FISHING	OPEN	CLOSE
Black Bass from Ozark Streams	05/24/14	02/28/15
Bullfrogs and Green Frogs	Sunset	Midnight
	6/30/14	10/31/14
Nongame Fish Gigging	09/15/14	01/31/15
Paddlefish on the Mississippi River	09/15/14	12/15/14
Trout Parks	03/01/14	10/31/14
HUNTING	OPEN	CLOSE
Coyote	05/12/14	03/31/15
Deer		
Archery	09/15/14	11/14/14
	11/26/14	01/15/15
Firearms		
Urban Portion	10/10/14	10/13/14
Early Youth Portion	11/01/14	11/02/14
November Portion	11/15/14	11/25/14
Antlerless Portion (open areas only)	11/26/14	12/07/14
Alternative Methods Portion	12/20/14	12/30/14
Late Youth Portion	01/03/15	01/04/15
Groundhog (woodchuck)	05/12/14	12/15/14
Pheasant		
Youth	10/25/14	10/26/14
North Zone	11/01/14	01/15/15
Southeast Zone	12/01/14	12/12/14
Quail		
Youth	10/25/14	10/26/14
Regular	11/01/14	01/15/15
Rabbit	10/01/14	02/15/15
Squirrels	05/24/14	02/15/15
Turkey		
Archery	09/15/14	11/14/14
	11/26/14	01/15/15
Firearms		
Fall	10/01/14	10/31/14
Waterfowl	please see the <i>Waterfowl Hunting Digest</i> or see mdc.mo.gov/node/3830	
TRAPPING	OPEN	CLOSE
Beaver and Nutria	11/15/14	03/31/15
Furbearers	11/15/14	01/31/15
Otters and Muskrats	11/15/14	02/20/15

For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, *The Spring Turkey Hunting Regulations and Information*, the *Fall Deer and Turkey Hunting Regulations and Information*, the *Waterfowl Hunting Digest*, and the *Migratory Bird Hunting Digest*. For more information visit mdc.mo.gov/node/130 or permit vendors.

ASK
THE

Ombudsman



Eastern tiger swallowtail caterpillar

Q. My kids and the neighbor's kids found this huge caterpillar-looking thing in our neighborhood. It is about 2 to 2½ inches long, with a head diameter of ½ inch. Can you please identify it?

The caterpillar in your photo is an eastern tiger swallowtail butterfly. The adult is one of our common, large, swallowtail butterflies with mostly yellow wings but with black margins and black barring. The caterpillars are usually green until just prior to pupation when they turn brown, as in your specimen. In their earlier stages of development, the caterpillars have a different appearance that resembles a bird dropping. At the stage shown in your photo, the eyespots, which are not eyes at all, may fool some predators into thinking it is a snake or something other than a delicious treat for a bird to eat.

Q. I like to watch and take photographs of birds. Several

times I have noticed birds that will spread their wings over the ground and stay in that position for several minutes. What are they doing?

You probably observed birds that were anting, dusting, or sunning, depending on what they were actually doing. *Anting:* Many species of birds will spread their wings over ants or other insects that produce chemicals with insecticidal qualities. They will also pick up ants with their beaks and rub them through their feathers. The chemicals, such as formic acid, make their feathers less attractive to parasites that can infest bird feathers. They may also be getting the ants to expel their chemicals so that they can eat the ants and avoid

eating the strong chemicals, or using the chemicals to soothe areas of skin that are irritated from molting. *Dusting:* Dust is used to clean feathers in dry periods. *Sunning:* Birds will use sunlight to heat their bodies, or they will open up their feathers to release heat during hot temperatures. By closely observing the birds, you might be able to determine what they are doing.

Q. On my game camera I have several photographs of deer with prominent clusters of bumps on the backs of their heads, behind the ears. Can you tell me what those are and if they are harmful to the deer?

Although it is difficult to rule out other causes, it is common for deer to have ticks behind their ears at this time of the year. Ticks can swell to many times their normal size after they attach to a host. The ticks accumulate in the areas that the deer cannot reach when grooming. With the advent and popularity of game cameras, more people are observing deer in that condition. Fortunately, most ticks do little harm to the health of the animals as they only feed for a short time (generally less than a week) before falling off. We have not received any reports or diagnosed any anemias in wildlife due to heavy tick burdens. They do look awful, but the animals themselves generally do not seem to notice them. The ticks should be gone with the arrival of colder temperatures in the fall.

Ombudsman Tim Smith will respond to your questions, suggestions, or complaints concerning the Conservation Department. Address: PO Box 180, Jefferson City, 65102-0180 Phone: 573-522-4115, ext. 3848 Email: Ombudsman@mdc.mo.gov

NEWS & EVENTS

by Jim Low



The Lewis Family, Dean, Anna Mae, and David D. Lewis Memorial Conservation Area

Donated Conservation Area Opens in Taney County

Missourians have a new conservation area in Taney County, thanks to the generosity of a native son of Rockaway Beach, the late David D. Lewis.

The area, formally named The Lewis Family, Dean, Anna Mae, and David D. Lewis Memorial Conservation Area, is northeast of Branson. It consists of 362 acres of upland and bottomland forest, woodland, savanna, and glades and contains several small wildlife watering holes. Bull Creek runs through the southern portion

of the area and empties into Lake Taneycomo approximately 2½ miles downstream. The area was opened to the public last December. It has a parking lot on its east side along Highway 176.

"Mr. Lewis contacted the Department back in 2008 and expressed his interest in donating the land," says Resource Forester Greg Cassell. "He was passionate about preserving his family's homestead and sharing it with generations to come. Folks coming to the area have the op-

portunity to enjoy a range of outdoor activities including hiking an old woods road, bird watching, fishing along Bull Creek, and hunting small game, turkey, and deer. This is just a wonderful donation and the fact that the area is so close to Branson makes it even more special."

Lewis worked for Sears, Roebuck, and Co. in Springfield for nearly 40 years. He was known for his humility and frugality.

To reach the area, take Highway F east 3.4 miles from the intersection of Highways 465 and 65. Turn right on Highway 160 and go southeast one-quarter mile to Highway 176. Turn right and go south two-thirds of a mile to the parking lot on the west side of the highway.

Upper Mississippi CA Blind Drawing Date Set

Waterfowl hunters will have the opportunity to compete for prime fall hunting spots on the Upper Mississippi Conservation Area (CA) on July 12. That's when the Missouri Department of Conservation will hold the biennial drawing for duck blinds on pools 24, 25, and 26 on the Mississippi River north of St. Louis.

Important to note is the change of location. The drawing will be at the Conservation Department's regional office at 2360 Hwy. D, St. Charles, Missouri. Participants can register for the drawing from 8 until 9:30 a.m. The drawing will begin at 10 a.m.

You must be 16 or older to register for the drawing. Hunters age 16 to 64 are required to bring a 2014 Missouri Small Game Hunting Permit. All participants will need a 2014 Migratory Bird Permit and signed 2014 Federal Migratory Bird Hunting and Conservation Stamp, as well as a photo ID.

Maps will be provided for successful hunters to choose their blind sites as they are drawn. Successful hunters may also select up to three co-registrants to occupy the blind with them. Successful hunters also must provide name, address, phone number, date of birth, email address, and conservation identification number for all co-registrants they wish to add to their blind.

Upper Mississippi CA includes federal lands along the Mississippi River north of St. Louis. It consists of 87 separate tracts totaling 12,500 acres between Melvin Price Lock and Dam and LaGrange, Missouri. For more information, call 314-877-6014 or 636-441-4554.

Captive Cervid Regulations Changes

The Conservation Department's Regulations Committee recently voted to recommend to the director several changes to regulations regarding the operation of private hunting preserves and wildlife breeding facilities that hold white-tailed deer, mule deer, deer hybrids, and other members of the deer family, known as cervids. If approved by the Conservation Commission, the changes would become part of the agency's strategy to minimize the risk of chronic wasting disease (CWD) spreading beyond the small area along the border of northeastern Linn County and northwestern Macon County where it currently exists or being introduced into new areas. Measures related to the management of the free-ranging deer herd have already been implemented.

CWD is a fatal disease that affects members of the deer family, collectively called cervids. It is different and unrelated to hemorrhagic diseases. Those diseases — blue tongue and epizootic hemorrhagic disease — are caused by viruses. Their effects are short-term and localized. Hemorrhagic diseases have been in Missouri for years, and white-tailed deer are adapted to cope with them.

In contrast, CWD is caused by abnormal proteins, called prions. There is no vaccine or treatment for CWD, and it is 100-percent fatal to infected deer. It spreads through deer herds more slowly than hemorrhagic diseases, but its potential long-term effects are much more serious.

The Department is working to ensure future generations of Missouri children can enjoy deer and deer hunting like their parents and grandparents. Protecting the state's free-ranging deer herd, cultural traditions, and hunting heritage, and ensuring an economic engine for the future are all goals of the agency.

Besides jeopardizing the hunting traditions and wild food resources enjoyed by 520,000 Missourians, CWD could negatively impact many landowners throughout Missouri who have managed and worked their properties for better deer habitat. Those landowners have invested time and money and value their land for deer hunting and viewing opportunities.

Actions recommended by the Regulations Committee include:

- Banning the importation of live white-tailed deer, mule deer, and hybrids from

other states.

- Improving fencing requirements for new captive cervid facilities.
- Require CWD testing and reporting for all deer that die that are 6 months or older in Conservation Department-permitted wildlife breeder facilities and all cervids that die in Department-permitted big-game hunting preserves.
- Better record-keeping requirements for Conservation Department-permitted captive cervid operations.
- Not allowing any new captive cervid facilities within 25 miles of where CWD has been confirmed.

The recommendations are designed to reduce the risk of CWD spreading beyond the limited area where it currently is found while minimizing the economic impact on the captive cervid industry.

If the Conservation Commission approves the recommended regulation changes, they will be submitted to the Secretary of State for publication in the Missouri Register (sos.mo.gov/adrules/moreg/moreg.asp). After a 30-day public comment period any comments on the proposed amendments will be forwarded to the Conservation Commission for their review and final action to approve as written, amend, or withdraw the proposed amendments.

The goal of these recommendations is to substantially reduce risk of CWD spreading, while



CONSERVATION COMMISSION ACTIONS

The April Commission meeting featured presentations and discussions regarding the 25th anniversary of Missouri Stream Teams, the value of federal aid in wildlife and sport-fish restoration programs, deer population status and the 2014–2015 deer hunting recommendations, and the communications strategy overview. A summary of actions taken during the April 16–17 meeting for the benefit and protection of forest, fish, and wildlife, and the citizens who enjoy them includes:

» **Approved** the following 2014 early migratory bird hunting seasons

- **Sora and Virginia rails:** Sept. 1–Nov. 9, with limits of 25 daily and 75 in possession (combined for both species).
- **Wilson's (common) snipe:** Sept. 1–Dec. 16, with limit of eight daily and 24 in possession.
- **American woodcock:** Oct. 15–Nov. 28, daily limit of three, possession limit of nine.
- **Mourning doves, Eurasian collared doves, and white-winged doves:** Sept. 1–Nov. 9, with limits of 15 daily and 45 in possession (combined for all three species).

» **Approved** the following changes in deer-hunting regulations

- **Increased** the number of firearms antlerless deer permits available to landowners of 75 or more contiguous acres in Barton and Jasper counties from one to two and maintained the current availability of landowner firearms antlerless permits in all other counties.
- **Allowed** any number archery antlerless permits for Stoddard and Carter counties.
- **Adjusted** the availability of firearms antlerless permits to one in 60 counties.
- **Adjusted** the availability of firearms antlerless permits to two in 20 counties.
- **Removed** Christian County from the Springfield urban zone.
- **Set** managed deer hunts and made changes to area-specific regulations. These will be outlined in the *2014 Fall Deer and Turkey Hunting Regulations and Information* booklet and online at mdc.mo.gov.

The next Conservation Commission meeting is June 5 and 6. For more information, visit mdc.mo.gov/node/3430 or call your regional Conservation office (see Page 3).

NEWS & EVENTS

(continued from Page 7)

putting in place safeguards to help prevent CWD from entering Missouri and to detect any spread of CWD early enough to take corrective actions. The Regulations Committee considers the recommendations reasonable, sensible, and responsible. Furthermore, they are in keeping with the Department's responsibility to protect the state's wildlife.

Don't Adopt Wildlife

May is a month of rebirth as lush green foliage appears, and animals from robins to white-tailed deer bear their young. It's a time when conservation agents and biologists with the Missouri Department of Conservation routinely receive calls

from people wanting to know what to do with what they believe are orphaned animals. The answer — leave the animal where it is or return it to where it was found — sometimes upsets callers. But leaving wildlife in the wild is best for all concerned.

Many of the calls involve white-tailed deer fawns found without a doe anywhere to be seen.

"Many people don't understand that it is perfectly normal for does to leave fawns for short periods to feed," says Resource Scientist Jason Sumners. "Hanging around their fawns 24-7 would actually make them less safe by attracting predators' attention."

Nevertheless, every year well-meaning people remove fawns from the safety of their natural habitat to human habitations, jeopardizing their immediate health and depriving them of the chance to live free.

"A deer raised by humans typically loses its natural fear of people," says Sumners, "and without the care of its mother, it isn't equipped for life in the wild. It's a lose-lose situation."

Unlike domestic animals, which have been bred to be tame, wild animals are unpredictable and often become aggressive when they reach adulthood.

"Animals that are adorable when they are little can become unmanageable and dangerous as they mature," says Sumners. He also notes that approaching fawns can trigger the protective instincts of their mothers, who might be watching from a discreet distance.

"Deer seem gentle, but they are surprisingly powerful for their size, and their pointed hooves can inflict serious injury. It isn't wise to approach deer or any other wildlife."

"It's often very difficult to tell people not to bring young animals home," says Wildlife Health Specialist Jasmine Batten. "Compassion is one of the best human traits, and wildlife professionals care about animals, too. But the risks to people from adopting wildlife outweigh emotional considerations, especially when you recognize that many of these animals are not orphans at all. They simply don't happen to be with their parents."

Besides all these reasons for not adopting wildlife, it is illegal to possess live wild animals without a permit from the Conservation Department. In cases where animals are known with certainty to be orphaned, when the parent has been struck and killed by an automobile, for example, the right course of action is to call a conservation agent or Conservation Department office.

For more information about the hazards of adopting wildlife, visit mdc.mo.gov/node/4706.

Conservation Department Fights Invasives

If you own an aquarium, a boat, or fishing equipment, you have an important role to play in protecting aquatic resources. That is the take-home message from a recent southwest Missouri news story.



WHAT IS IT?

Nine-Banded Armadillo | *Dasypus novemcinctus*

Armadillos do not have furry skin; instead, they have hair only between hardened plates of skin that nearly encompass the body. There are two large plates with a series of nine smaller moveable "girdles" or "bands" around the midsection. Breeding occurs in the summer followed by a delay of 2–3 months during which the embryo divides into four cells before each one becomes implanted in the uterus. This results in identical quadruplets. Newborn young have no shell, but their eyes are open and they can move about.

Because they dig burrows in the ground, armadillos select wooded bottomlands, brushy areas, and fields with ground cover and loose soil. Their sight and hearing are poor, and they have the unusual habit of jumping upright when frightened, which explains why so many are hit by automobiles. They can run fast when pursued, and when cornered they often curl into a ball, protected by their shell. —photograph by Noppadol Paothong

DID YOU KNOW?

The Conservation Department partners with Missourians to sustain healthy streams.

The Missouri Stream Team Program is celebrating 25 years of citizens caring for Missouri streams.

Stream Team provides an opportunity for everyone to get involved in the conservation of more than 110,000 miles of Missouri streams. More than 4,000 active Stream Teams are located throughout the state, totaling 85,000 citizens.

Stream Team goals:

- » **Education** — Learn about Missouri's 110,000 miles of flowing water. Stream Team provides training and information to better understand our stream systems and the problems and opportunities they face.
- » **Stewardship** — Hands-on projects such as litter control, streamside tree planting, water quality monitoring, and storm drain stenciling.
- » **Advocacy** — Citizens who have gained a firsthand knowledge of the problems, solutions, and needs of Missouri's stream resources are best equipped to speak out on their behalf.

Since 1989, Stream Teams reported:

- 10,055 tons (2 million pounds) of litter removed from waterways
- 4,245 educational events conducted
- 264,438 streamside trees planted
- 17,312 storm drains stenciled
- 25,335 water quality monitoring trips made
- Over 2.2 million volunteer hours dedicated to conserving Missouri streams

Stream Team membership:

Stream Team membership is free to any interested citizen, family, or organization. Team members have access to a large number of supplies and educational materials. You may adopt any stream or river of your choice. The Department can suggest streams or connect you with other Teams in your area. To learn more about Missouri Stream Teams, visit mostreamteam.org or call 1-800-781-1989. Facebook users can also find information about upcoming events and accomplishments of Stream Team volunteers at facebook.com/mostreamteams.

The story starts when an eastern Greene County pond owner brought an unfamiliar plant to the Conservation Department's Springfield office for identification. It's a good thing they did. The plant turned out to be hydrilla (*Hydrilla verticillata*), a highly invasive aquatic plant that had not previously been documented anywhere in the Show-Me State.

Alerted by this citizen report, the Conservation Department soon found separate sites of hydrilla infestation in Warren and Dallas counties and began eradication efforts in cooperation with landowners. Getting rid of the plant will require multiple herbicide applications over the course of several years.

Although eradicating a hydrilla infestation is not easy, it is worth the trouble. The plant crowds out beneficial native vegetation, such as coontail, and it can grow in deeper water. Once established, it covers the surface of the water, making fishing almost impossible and causes other problems, including clogging water intakes on marine engines. If it were allowed to spread to Missouri's large lakes, it could cause substantial damage to the state's multi-million dollar fishing tourism industry.

Conservation Department Fisheries Management Biologist Kara Tvedt says hydrilla is an extremely adaptable plant, and this includes its ability to spread to new areas.

"It is a very mobile plant," says Tvedt. "It can be introduced into new areas when people dump water from an aquarium or it can hitch a ride on a boat trailer that has been in infested waters. Sometimes it comes in when people move other plants from one area to another. It can even travel on the feet of migrating waterfowl. Once it is in a pond, it can escape and spread downstream through overflow." Tvedt says the Conservation Department will use what it learns from current hydrilla control efforts to advise landowners in the future. Just as important as eradication efforts, she says, is avoiding practices that can spread the plant.

Tvedt says the Conservation Department will help landowners get rid of hydrilla, regardless of how it got on their property. Equally important, she says, is avoiding practices that can spread the plant.

"It's extremely important for boaters, anglers,

and aquarium owners to know that their actions can have serious consequences for Missouri's aquatic resources," says Tvedt. "Removing all vegetation, mud, and other foreign material from boats and trailers before moving from one area to another is easy. So is making sure not to dump bait or water from minnow buckets or aquariums in places where hydrilla or other invasive species

might get into local water bodies."

For more information about hydrilla, visit mdc.mo.gov/node/28071. Hydrilla is only one of several invasive plants and animals that threaten Missouri's wild resources. More information about invasive species and how you can help prevent their establishment is available at mdc.mo.gov/node/21445.

FISHING *for* BE



GINNERS

Becoming an angler is easy and fun. Here is what you need to know.

BY ANDREW BRANSON | PHOTOGRAPHS BY NOPPADOL PAOTHONG



MISSOURI HAS A RICH HERITAGE of fishing and wonderful opportunities all around the state. Whether you want to fish in a pond, lake, river, warm water, cold water, from a boat, the bank, or even standing in the water, Missouri has it all.

If you have never fished before and want to try, you might feel intimidated. You may not know where or how to begin. This article will answer some basic questions about fish, equipment, bait, locations, and regulations. We will also tell you where you can learn more as your skill and interest grow.

What Fish Are Out There?

Missouri has more than 230 species of fish, and your location will determine the types of fish you might catch. Some fish are more common in streams, while others are more common in lakes and ponds. The most common types of fish you will catch are:

- Bluegill and other sunfish (hybrid bluegill, green sunfish, redear sunfish, etc.)
- Largemouth bass
- Channel catfish
- Crappie
- Trout

You never know what type of fish you might catch, and the Department of Conservation's online Fish ID and Measuring page at mdc.mo.gov/node/8923 is a wonderful source to learn what kinds of fish are out there and what they look like. You can also request a free *Know Your Catch* fish identification pocket guide by sending your name and address to pubstaff@mdc.mo.gov or by mailing your request to: Know Your Catch, PO Box 180, Jefferson City, MO 65102-0180.



What Equipment Do I Need?

Your equipment is generally determined by the type of fish you want to catch. While there is specialized equipment out there, basic equipment is all you really need for an enjoyable and successful outing.

At the most basic level is a cane pole (bamboo rod). This is literally a long bamboo pole with a length of fishing line attached, and a hook. The advantages of a cane pole are that it is inexpen-



MISSOURI HAS MORE THAN 230 SPECIES OF FISH. SOME ARE MORE COMMON IN STREAMS, WHILE OTHERS ARE MORE COMMON IN LAKES AND PONDS.



If you have never fished before and want to try, you might feel intimidated, but basic equipment is all you really need for an enjoyable and successful fishing trip.

sive and easy to use. You can hold it in either hand, and no casting or reeling is required. You just flip your line into the water. A disadvantage is that you are limited to a relatively short length of line, so you can fish only areas close to you.

Most anglers find that a rod with a reel better fits their needs. This combination allows you to cast your line farther away and also to fish in deeper areas. Fishing rods come in a range of prices and lengths, but an inexpensive pole at a length between 5 and 6½ feet is good for most people. Children often need slightly shorter fish-



ing rods. Rods can be of one-piece construction or separated into two or more sections for easier transport and storing.

The two most basic types of reels are the closed-face spinning reel and the open-face spinning reel. The closed-face spinning reel has a thumb button for releasing the line, and is generally

considered easier to use and best for beginners. Typically, the larger the reel, the more line it can hold, and also the heavier the line it can hold for catching bigger fish. Bluegill and crappie do not require heavy line to catch them. Matching line weight to your potential target fish can improve your success. People who switch to the open-face reels like their action and the extra control they have when casting.

Other basic equipment:

- Tackle box
- Lures, hooks, bobbers, and bait
- Stringer for keeping fish
- Needle-nose type pliers or other type of hook remover
- A hand-held net to lift larger fish out of the water is also helpful.



What Kind of Bait Do I Use?

Once you have your fishing rod, you need to attach a baited hook or artificial lure to the end of your line. The sight, smell, and sound of your bait are all important in catching fish. Fish will eat just about anything that will fit into their mouths, but the best all-around bait is probably an earthworm or a part of a night crawler. Putting something on the end of your line that the fish actually eat, or attaching an artificial lure that looks like something the fish want to eat, is key to catching a fish.

Easy and effective bait:

- Earthworms
- Minnows
- Crickets and grasshoppers

Earthworms make good bait for most fish. The sight, smell, and sound of your bait are all important in catching fish.

A closed-face spinning or spincast reel (top) is generally considered easier to use and best for beginners, and the open-face spinning reel (bottom) offers extra control when casting.

- Dough bait, stink bait, hot dogs, cheese, etc.

Bait such as earthworms, minnows, crickets, and grasshoppers are good for catching most fish, while dough bait, stink bait, hot dogs, and cheese are especially good for catching catfish which mainly use sense of smell to find food. You can collect live bait on your own, or you can buy from fishing suppliers that sell live bait. A list of registered bait dealers around the state can be found online at mdc.mo.gov/node/23291.

Bait items are attached to hooks that are specially designed to hold the bait on, and they are usually fished with a bobber and sinker. The position of the bobber holds the bait at a certain depth under the surface and helps you know when you have a bite. The sinker positioned above the hook helps the bait and line hang straight and under the bobber. Minimizing the size of your bobber to one that barely suspends your bait while being visible will increase your catch rate. Once you have rigged your fishing pole, cast your line into the water and wait for the fish to bite.





A set of needle-nose pliers is a great tool for removing hooks.

Another option is to use artificial lures. These lures are designed to look like an actual food item to a fish and, when cast out and retrieved by the angler, behave naturally as well. Artificial lures come in many varieties, and they are made to simulate food sources such as fish, worms, crayfish, and insects. Lures can be made from hard or soft plastic, metal, and wood. Some are designed to float at the surface, while others “swim” deeper in the water. There are many different designs of artificial lures you can use to give a natural-looking action that will hopefully encourage a fish to bite. For example, spinner and buzz baits use metal blades to create a vibration and disturbance in the water that will often attract fish.

Whether you are using a hook that holds bait or using an artificial lure, you need to know the proper way to tie it on your fishing line. Using a knot that won’t slip in the water is important. The “improved clinch knot” is one of the best all-around fishing knots.

Where Can I Fish?

Missouri fishing areas are either public or privately owned. Publicly owned fishing accesses are typically operated by city, county, or state agencies. Some examples are Missouri’s state parks and conservation areas, as well as city- and county-owned lakes and river accesses. You can find a list of conservation fishing accesses by contacting your local conservation office or through our online Conservation Atlas at mdc.mo.gov/atlas.

Improved Clinch Knot

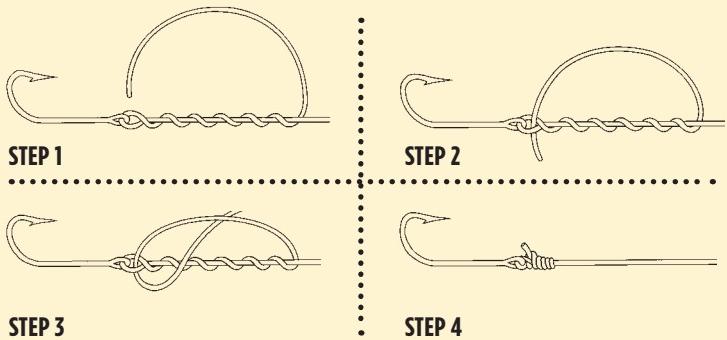
There are dozens of different knots, but most anglers settle on one or two favorite knots to tie line to reels, hooks, swivels, and lures. The improved clinch knot is strong and easy to tie, even with cold, wet fingers.

STEP 1 Run the end of the line through the eye of a hook about 6 inches and fold it back on itself. Holding both pieces of line in your fingers, rotate the hook about 10 half-turns. The doubled line between your fingers and the hook will now be twisted.

STEP 2 Insert the end of the line through the space between the first twist and the hook eye.

STEP 3 Bring the tag end of the line back through the loop made by the previous step. You’ll find it helpful to use the fingers holding the hook to help you guide the end through the loop.

STEP 4 Pull on both the line and the tag end to tighten the knot and snug it up to the eye. The knot will come together more smoothly if you moisten the line with saliva before tightening. Trim the tag end about $\frac{1}{4}$ -inch away from the knot.



In order to fish private waters or use privately owned fishing accesses, you must have permission from the owner.

What Regulations Do I Need to Know?

Individuals 16 to 64 years of age must purchase a fishing permit or qualify for an exemption in order to fish or collect certain animals for live bait. Anyone younger than 16 can fish with pole-and-line without a fishing permit; however, they do need a permit if fishing with other methods such as trotlining. Any Missouri resident 65 and older does not need a fishing permit. However, a trout permit or daily tag may still be required for youth and adults even if they qualify for fishing permit exemption. There are also military and disability conditions that will qualify some people for a fishing-permit ex-



emption. Permits can be purchased from most vendors that sell fishing equipment or online at mdc.mo.gov/node/89.

There are regulations on the number of fish you can keep and their size. The fishes of Missouri are grouped into two categories called game fish and nongame fish, and the regulations vary depending on the species. Regulations can also vary depending on the location you are fishing. You can find signs posted with this information at all areas managed by the Department of Conservation, but it is best to research the regulations before you head out. The *Summary of Missouri Fishing Regulations* is a good source for answers to your fishing regulations questions, and it is available free at your local Department of Conservation office and most fishing suppliers. You can also find it online at mdc.mo.gov/node/3104.

Where Can I Learn More?

There are many publications and online fishing sites that can help you learn how to fish, but practicing casting and tying the improved clinch knot are great ways to become familiar with the equipment. Tying on an inexpensive casting plug and practicing casting in your yard, driveway, or other open area is great way to learn. With a little practice, you will master the art of casting and be able to throw the lure right where you want it. If you would like to try some fishing equipment before you purchase your own, your Department of Conservation regional office (Find phone numbers on Page 3, or visit mdc.mo.gov/node/252) can assist you with loaner equipment.

One of the best ways to learn how to fish is to find a mentor or someone who can demonstrate techniques for you. The Department provides a variety of workshops and classes that can help you with basic fishing, as well as specialized classes for other types of fishing. Discover Nature — Fishing (DN — F) is a newly developed angler education program that the Department will be offering in 2014 for youth and families. DN — F is a four-part series of workshops that provide fishing education by Department staff and fishing volunteers that teaches participants equipment; casting; proper fish handling; how to tie a knot and bait a hook; five common Missouri fish — their anatomy, habitats, and life cycles; fishing with lures; and fish-

Fishing: Where to Get Started

by Bob Mattucks

Missouri has many lakes and ponds available to people who enjoy fishing. There is also big-river fishing and access to many smaller streams. If you are looking for a monster blue catfish or a stringer of trout, you can find it here.

The Department of Conservation has many programs to provide close-to-home fishing for everyone in the state. The Department has purchased land and developed community lakes all across Missouri. In St. Louis and Kansas City, the August A. Busch Memorial CA and the James A. Reed Memorial Wildlife Area were developed to provide many different fishing opportunities close to these large urban areas.

The Department has reached out to cities, towns, and other government agencies with our CAP (Community Assistance Program) agreements. This program provides fish management, fish stocking, signage, additional regulation enforcement, and the possibility to cost share on improvements to a fishing area not owned by the Department. These improvements could include boat ramps, fishing docks, restrooms, and road improvements. In return for providing these services, the CAPs are open for all to fish.

The Department also has many special fish stocking programs that take place throughout the year. These stockings include channel catfish, trout, walleye, and hybrid stripers.

So how do you find a place to go fishing? If you have computer access, check out the Department's "Places to Fish" page at mdc.mo.gov/node/2478. This page features a search tool for Public Fishing Areas, as well as the Missouri Conservation Area Atlas (locations, rules, and the best bets for fishing Department-owned and managed areas), the Missouri Fishing Area Fishing Prospects Survey (a yearly fishing report written by local fisheries biologists), the Current Fishing Report (weekly reports, from spring to fall), and much more. You can also download the Department's free Find MO Fish app at mdc.mo.gov/node/15421. If you don't have online access, just look up your Department regional office on Page 3 and give us a call. We will help you find that special fishing area close to you.

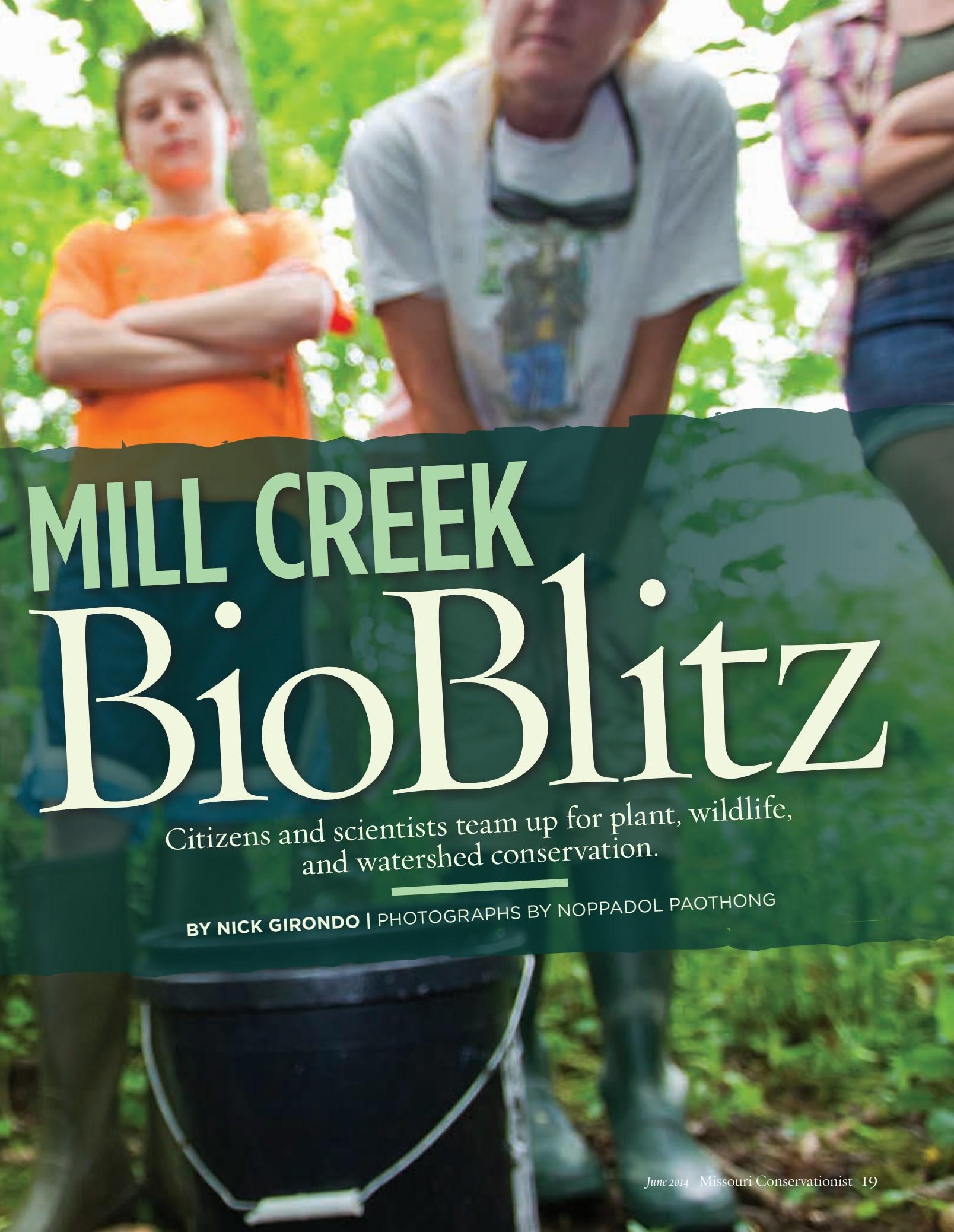
Bob Mattucks is a fisheries management biologist who works out of the Kansas City Regional office.

ing regulations. Contact your local Conservation office about classes in your area.

Now that you know a little more about how to get started fishing, hopefully you will take the next steps and explore all the wonderful fishing opportunities Missouri has to offer. You can begin, or continue, a great angling tradition for yourself or your whole family. ▲

Andrew Branson, fisheries programs specialist, has been with the Department for nine years. Born and raised in southwest Missouri, Andrew lives with his family south of Jefferson City.





MILL CREEK BioBlitz

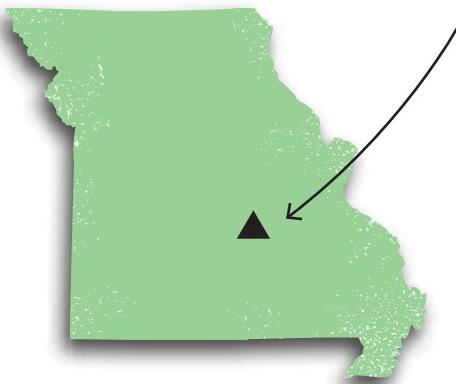
Citizens and scientists team up for plant, wildlife,
and watershed conservation.

BY NICK GIRONDO | PHOTOGRAPHS BY NOPPADOL PAOTHONG

What do you get when you combine passionate volunteers, dedicated biologists, and a unique landscape in the northern Ozarks on a Saturday in June? The Mill Creek BioBlitz, where almost 400 distinct species of plants and animals were recorded in one day. The group documented a wide diversity of plants and animals in a 29,000-acre watershed, and they removed a dumpster's worth of trash from the landscape.

A BioBlitz is a 24-hour event in which scientists lead teams of volunteers to find and identify as many species of plants, animals, insects, and other organisms as possible. The Mill Creek BioBlitz was put together

by a wide array of people who care about the area and want to use this data to help develop a watershed plan. This plan will help residents and government agencies work together to create and carry out projects to conserve this unique landscape.



An Outstanding Area

Mill Creek lies in Phelps County, not far from Interstate 44, southwest of the town of Newburg. Most people know Mill Creek because it is one of the few streams in Missouri with naturally reproducing rainbow trout. For those up to the challenge, it is a fly-fishing paradise. However, Mill Creek is also loaded with other amaz-

ing plants and animals. The creek and its watershed are a priority for both the Conservation Department and Mark Twain National Forest (MTNF). More than 60 percent of land in the watershed is held in public trust by the Conservation Department or MTNF. There is also a passionate group of people looking to conserve

Prothonotary warbler





the land and water for future generations called the Mill Creek Watershed Coalition (MCWC).

What was found in that special landscape? Biologists and their volunteers recorded 392 species between 8 p.m. Friday, June 14, and 1 p.m. Saturday, June 15, 2013. They recorded five bats, 69 birds, 17 fish, 20 amphibians and reptiles, 11 mammals, 95 insects/macroinvertebrates, and 175 plants. An impressive list for a relatively small area!

The Big Event

The BioBlitz kicked off on Friday evening when three groups mist-netted for bats. The netting effort lasted well into Saturday morning. The most common bats caught were red bats and northern long-eared bats. Unfortunately, no endangered bats, such as Indiana bats, were captured, though they are known to be in the area.

Another group of early risers

**In 24 hours
volunteers
recorded 392
species.**

**Five bats,
69 birds, 17 fish,
20 amphibians
and reptiles,
11 mammals,
95 insects/
macroinvertebrates,
and 175 plants**

recorded birds by call and sight, starting at 5:30 Saturday morning. Their trails transversed both upland and bottomland habitats. A total of 69 species of birds was recorded,



Western wormsnake

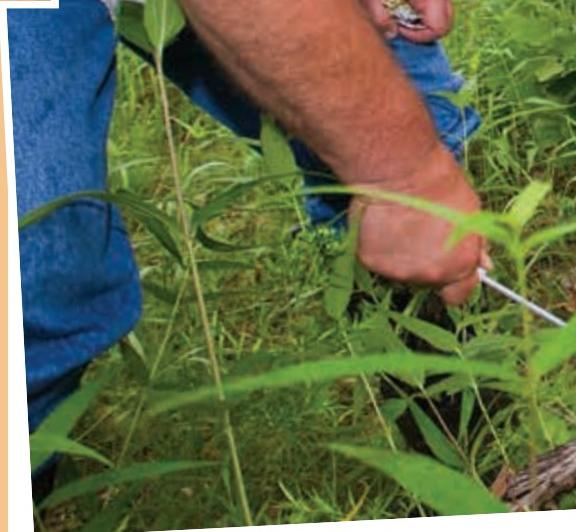
with the most common species being red-eyed vireos, American crows, blue-gray gnatcatchers, and northern cardinals. Beautiful birds with specific habitat requirements, such as the prothonotary warbler and scarlet tanager, were also observed.

The remaining biological collections happened from 8:30 a.m. until 1 p.m. on Saturday.

Aquatic groups searched for fish and macroinvertebrates (species large enough to be seen with the naked eye, but which lack a backbone, such as clams, snails, and worms) along the creek and in the fens and wetland areas using seines. Volunteers got wet collecting 17 species of fish, two species of crayfish, and 26 other species of macroinvertebrates. Two fish species of conservation concern were collected in abundance, the plains topminnow and least darter, proving that Mill Creek has high-quality aquatic habitats. Rainbow trout, bluegill, bleeding shiners, and rainbow darters were also collected in large numbers.

Twenty species of amphibians and reptiles were collected by groups in the bottomlands along Mill Creek and in an oak woodland called Western Star Flatwoods. These volunteers came back covered in mud, yet asking when they could do it again. Their tally included five turtles, two salamanders, six frogs, four snakes, and three lizards. The most commonly collected species were painted turtles and gray tree frogs. One of the most unusual, according to the volunteers, was a worm snake.

Insects were collected by two groups who checked traps set the night before and netted additional species during the day. Volunteers observed 70 species, and most of those were collected in sites along Mill Creek. One group



Twenty species of amphibians and reptiles were collected.

**Five turtles,
2 salamanders,
6 frogs, 4 snakes,
and 3 lizards.**

leader said it was a sight to see adults acting like children chasing butterflies. The watershed is also home to the Hines emerald dragonfly, which is federally endangered.

Large and small mammals proved to be the hardest to find during the start of summer, and only 13 species were recorded. Volunteers used flour traps, game cameras, and baited traps

as well as active searching to document these species during the BioBlitz. Whitetail deer, gray squirrels, and raccoons were the most common.

Volunteers identifying plants had the most daunting task. Four groups tackled trees, woodland plants, or nonnative invasive plants, and they collectively recorded 175 plant species. Each group had some overlap in species identified, except for 15 aquatic

SUPPORTERS *A special thank you to:*

Americorp (St. Louis) • City of Newburg • Fort Leonard Wood Natural Resources Branch • Friends of Mill Creek • Houston House — Newburg • Local Landowners • Mark Twain National Forest • Mill Creek Watershed Coalition • Missouri Audubon Society • Missouri Department of Conservation • Missouri Department of Natural Resources • Missouri Master Naturalist (7 different chapters) • Missouri River Relief • Missouri Stream Teams (5 different teams) • Missouri Stream Team Watershed Coalition • Missouri State University — Springfield • Missouri State University — West Plains • Missouri University of Science and Technology • Ozark Fly Fishers • Roubidoux Flyfishers • State Representative Dr. Keith Frederick — District 149 • Splash Designs • Troutbusters • U.S. Fish and Wildlife Service • USA Tours



Volunteers identifying plants had the most daunting task. No extremely rare plants were found, but some beneficial, as well as some potentially detrimental, were documented that were not previously known to be in the watershed



Little brown skink

plants. The plants encountered most often were oaks, sedges, blackberries, goldenrods, lespedezas, milkweeds, and tick trefoil. No extremely rare plants were found, but some beneficial, as well as some potentially detrimental, were documented that were not previously known to be in the watershed.

The land and water cleanup portion of the BioBlitz was handled by MCWC through their affiliation with Missouri Stream Team. Three groups of volunteers, equipped with boats to haul trash, cleaned up the creek. An additional three groups of volunteers walked and collected litter along the most heavily used roads. The whole cleanup effort filled a large roll-off dumpster at the end of the day. The trash included scrap metal from farms, old fencing, bent posts, ran-

dom plastic pieces, cable, and other assorted junk, filling 29 large green mesh trash bags, plus 17 tires for recycling. The result was a much cleaner landscape for both Missouri's citizens and the animal and plant residents to enjoy.

The groups returned by 1 p.m. on Saturday, wet, muddy, itchy, and tired. They were greeted with food and music back in Newburg. The biologists worked up data sheets to give preliminary results, and the volunteers mingled and shared tales of their adventures.

In the end, this collaboration of citizens and scientists resulted in an incredible amount of data that will be used to create an important watershed plan. The biologists and volun-

teers also developed relationships that will long outlast this event. As one volunteer said, despite the muck and effort, "Thanks for this opportunity...what a wonderful day that I will treasure forever. Let's do it again."

To learn more about the Mill Creek Watershed Coalition, visit MillCreek-MO.org. ▲

Nick Girondo is a fisheries management biologist based in Rolla. He is passionate about the conservation of nongame fishes and loves taking long walks with a bird dog.



Missouri Citizens are Key to Deer Management Success



The Department of Conservation seeks input on proposed management approaches.

BY JASON SUMNERS

In last month's issue of the *Conservationist*, we discussed how changing deer populations have caused our management approach, hunting seasons, and regulations to evolve since the first deer season in 1944. In response to the greater challenges to deer management in the 21st century, we drafted a plan to address priorities and provide strategic direction for deer management over the next 10 years.

The white-tailed deer management plan clarifies the goals and objectives of the Missouri Department of Conservation and provides an opportunity for critical input from citizens. The plan was created following a thorough review of existing information, identification of management challenges, and assessment of the current status of white-tailed deer management in Missouri. A summary of that information can be found within the *White-tailed Deer Management Program Review* at mdc.mo.gov/deeropenhouse.

The complexity of challenges to deer management in Missouri continues to increase over time. These include, but are not limited to: managing deer in urban areas; public versus private land deer management; changing hunter attitudes, preferences, and demographics; changing land use practices; and disease threats such as chronic wasting disease. There is no optimal strategy for deer management, only a series of alternatives. Therefore, identifying goals and priorities is an important first step in establishing a foundation for the future of deer management in Missouri.

This plan outlines four primary goals that incorporate the current priorities for deer management in Missouri: 1) Use science-based wildlife management practices to maintain balanced deer populations below the biological and social carrying capacity within the management units, at levels acceptable for agriculture, ecosystems, recreational goals, and other considerations; 2) Provide opportunities for all citizens to enjoy deer-related recreational activities and promote deer hunting as a socially and culturally important tradition, as well as the primary tool to achieve deer population goals; 3) Ensure the maintenance of a healthy deer population, and minimize the threat and effects of diseases on the deer populations in Missouri; and 4) Provide information to the public about all aspects of deer biology and management in Missouri, and create opportunities for additional public engagement.

Ultimately, our priority is to develop a regulatory approach that meets deer population management goals, and that incorporates input from everyone involved, while promoting hunter recruitment, retention, and satisfaction.

Population Goals and Regulation Recommendations

The deer management plan will only be successful with citizen support, so it is important that the public understands the process for development of management strategies and regulations recommendations. Additionally, because deer management affects such a variety of people,

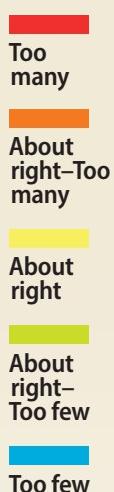
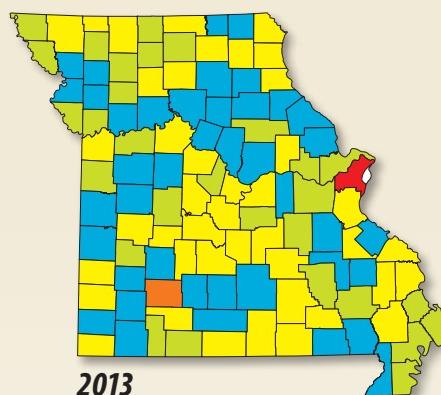


it is important to ensure that everyone has a chance to be heard and to participate.

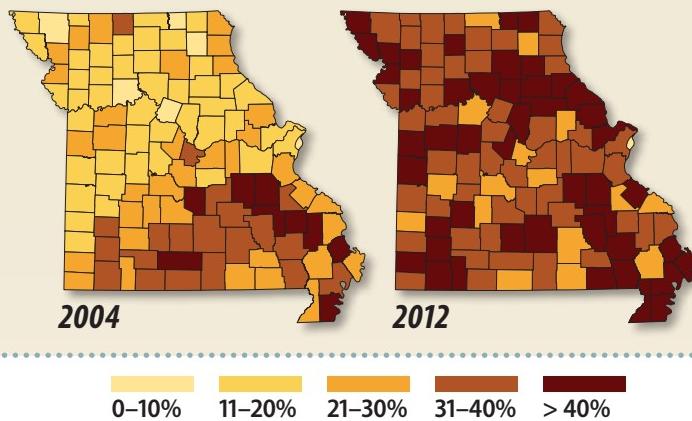
Each year we evaluate county-specific deer populations in the context of biological and social carrying capacities when developing regulation recommendations. Data sources include harvest data via Telecheck, scientific hunter and production landowner attitude surveys, hunter effort data, Department staff surveys, public comments, and population simulations. The Department's annual scientific mail surveys include 35,000 firearms deer hunters, 35,000 archery deer hunters, and 9,000 production landowners.

In the past, when major regulations changes that affect the way we hunt have been proposed, scientific surveys and public input have played a key role in development of the regulations approaches. For example, in 2003, the Department was investigating ways to curb a rapidly growing deer population by increasing antlerless harvest. During that regulation development process, several

Missouri deer populations, by county



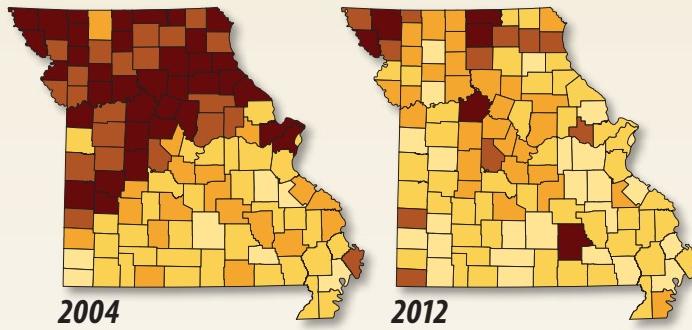
Percentage of hunters who perceive "too few" deer, by county



Missouri deer trends, by county



Percentage of landowners who perceive "too many" deer, by county



alternatives were presented and public input from scientific surveys, online comments, and public meetings lead to the development of an experimental antler-point restriction in 29 counties.

Recently, in response to declining deer numbers and input from hunters, landowners, wildlife enthusiasts and citizens, the Conservation Commission approved a reduction in the availability of firearms antlerless permits in order to achieve and maintain desired deer population levels in central, northern, and western counties. This reduction in permits is necessary to allow populations to stabilize or increase slightly.

Approaches for the Future

Our current deer season structure and hunting regulations were built during an era of rapidly growing deer populations, coupled with a concern that hunters would not harvest enough does to stabilize or decrease deer numbers in much of rural Missouri. In order to meet

the deer management challenges of today, we must reconsider our approach. Effective population management revolves around ensuring appropriate levels of harvest, which is affected by seasons and portions, season timing, methods, buck harvest limits, availability of permits, and several other factors. The goal is to adjust regulations in a manner that produces the desired population change (i.e., increase, stabilize, or decrease) in a simple manner that meets the desires of hunters to ensure recruitment and retention. Here are just a few of the many important issues that we will address in the coming weeks.

ARCHERY SEASON The archery deer season has been growing in popularity over the past several years. Additionally, archery hunting is a critical deer management tool in many urban areas where the discharge of firearms is restricted. With the increasing popularity of the archery season, we have received an increasing number of

requests to expand the season to include crossbows, which are currently only allowed with a medical exemption. Annually, there are more than 10,000 individuals who have received the medical exemption. In an effort to increase participation, recruit younger hunters, retain older hunters, and provide an additional tool for urban deer management, we are considering expanding the archery season to include crossbows.

SEASON AND PORTIONS The timing of various portions of the firearms deer season are of great interest and debate

At the April Commission meeting, the Conservation Commission approved a reduction in the availability of firearms antlerless permits in order to achieve and maintain desired deer population levels in central, northern, and western counties.



among hunters. The November portion during the peak of the rut was established at a time when the goal was to minimize doe harvest and maximize buck harvest, which is no longer the goal. Additionally, the current timing results in the removal of bucks during the peak of the breeding period, is disruptive to the established dominance hierarchies, and, biologically, is not an ideal time to apply heavy buck harvest. For example, the current timing means that only 40 percent of the breeding occurs prior to the November portion. A one-week later shift would mean that approximately 75 percent of the does would breed prior to opening of this portion of the deer season. We know from historical changes in season timing that when the firearms season shifts from the earliest possible date (Nov. 10), based on the current formula, to the latest date (Nov. 16), that doe harvest increases slightly and buck harvest decreases slightly. A one-week later shift to the firearms deer season would result in a slight increase in overall antlerless harvest and slightly decrease buck harvest.

Starting the November portion of the deer season one week later would also incorporate the Thanksgiving holiday. One of the often-cited reasons for not hunting more is limited time. Historically, when the firearms season included Thanksgiving, there was an increase in the number of days hunted. Therefore, by moving the season one week later it would provide additional opportunities for people who have a limited number of days to hunt.

ANTLERLESS PORTION As the deer population increased over the past several decades, so too has the number of days to hunt deer with a firearm. The increasing number of firearms deer hunting days has created conflicts for small game hunters and others who wish to enjoy the outdoors. When we consider the changes to the population across much of Missouri that has occurred over the past several years, the additional antlerless harvest opportunities provided by the antlerless portion are no longer necessary to meet population management goals. Removing the antlerless portion of the deer season may mean some lost deer hunting opportunities, but it would reduce conflicts that occur between other hunters due to the length of the current deer hunting seasons.

BUCK HARVEST Traditionally deer management did not limit or restrict buck harvest. As population management goals shift toward encouraging antlerless harvest and hunters' desire to see more bucks in older age classes, managers have begun to consider the restrictions on buck harvest as a tool to manage the sex and age structure of the deer population. For example,

Attend a Public Meeting

The Department of Conservation will hold public meetings in an "open house" format in all regions of the state to inform citizens of deer management efforts and gather feedback. The meetings will include discussions on possible regulation changes related to archery hunting and use of crossbows, timing of seasons, and harvest limits for bucks and does, as well as disease management efforts related to Chronic Wasting Disease and other infectious diseases. Meetings will be held from 3 p.m. to 8 p.m.

- **June 16: Rolla** — Rolla Junior High School Cafeteria, 1360 Soest Road
- **June 17: Springfield** — Missouri State University, Christopher Bond Learning Center, 2401 S. Kansas Expressway
- **June 18: Joplin** — Missouri Southern State University, Cornell Auditorium, Plaster Hall, 3950 Newman Road
- **June 19: Warsaw** — Warsaw Community Building Gym, 181 Harrison Street
- **June 23: St. Louis** — Crestwood Community Center Lounge, 9245 Whitecliff Park Lane
- **June 24: Jackson** — Knights of Columbus Hall, 3305 North High Street
- **June 25: Van Buren** — Van Buren Youth and Community Center, 1204 D Highway
- **June 26: West Plains** — West Plains Civic Center Exhibit Hall, 110 St. Louis Street
- **June 30: Kirksville** — Kirksville High School Gym, 1300 S. Cottage Grove
- **July 1: Chillicothe** — Litton Agriculture Campus, MW Jenkins Building, 10780 Liv 235
- **July 2: Lee's Summit** — Lakeland Community Church, 913 NE Colbern Road
- **July 7: Hannibal** — Quality Inn, Atlantis Ballroom, 120 Lindsey Drive
- **July 8: St. Joseph** — Missouri Western University, 218/219 Blum Union, 4525 Downs Drive
- **July 9: Columbia** — Hilton Garden Inn, Magnolia Room, 3300 Vandiver

For further information, please contact Michele Baumer at 573-522-4115, ext. 3350, or Michele.Baumer@mdc.mo.gov.

the antler-point restriction was implemented to shift harvest pressure from bucks to does and improve age structure of the buck segment of the populations. The point restriction has reduced the harvest of bucks 1½ years old, but has not greatly reduced total buck harvest. Therefore, the Department is considering reducing the total number of bucks an individual could harvest to reduce pressure on the buck segment of the population. This is particularly important as we explore ways to

encourage antlerless harvest and meet hunters' desire for more bucks in older age classes, particularly in areas where the antler-point restriction is not biologically or socially appropriate.

LOCALIZED MANAGEMENT AND ANTLERLESS PERMITS Now that deer populations have become well established across the state, most management focuses on meeting localized population goals. Because deer populations are affected by local factors such as habitat condition and hunter numbers, we must consider the application of antlerless harvest and allocations of antlerless permits on a much more localized basis. Until 2004, management occurred at the management unit levels, which included all or parts of several counties. Additionally, from 1974 to 2003, there was a quota system on the number of antlerless permits issued by management unit. In 2004, the Department went to county-based management, eliminated the quota system, and replaced it with the current system, which is based on limiting antlerless permits an individual could use on a county basis, but not limiting total antlerless permits available for that county. The quota system is slightly more complex than the current system, but it provides some control over the number of antlerless deer harvested by management unit.

As management intensity increases, the pressure for more small-scale localized management will also increase. The current system or the quota system for allocation of antlerless permits can only regulate harvest at the management unit level and cannot deal with small-scale localized differences that occur within a management unit. Therefore, wildlife management cooperatives, where neighboring landowners work together to meet common deer management goals, are increasing in popularity. The Department is also considering developing a Deer Management Assistance Program with some combination of county limit or quota that would allow for greater localized antlerless harvest flexibility, which would help hunters and landowners meet local management goals.

Please Give Us Feedback

These topics and many more will be discussed as part of our public engagement process over the next few months, as we work to manage for healthy and sustainable white-tailed deer populations. Please attend one of the scheduled open houses or review the associated materials and provide comments online at mdc.mo.gov/deeropenhouse. ▲

Jason Sumners joined the Conservation Department as a deer biologist in December 2008. Jason currently lives with his family in Columbia.



Common Yellowthroat

DURING SPRING AND early summer, I can often be found walking the prairies, forests, and wetlands of Shaw Nature Reserve in Franklin County. I think of the area as my “Walden,” peaceful and wild, although nestled close to civilization. One of my favorite visitors to the area is a compact and vociferous warbler called the common yellowthroat (*Geothlypis trichas*).

The male common yellowthroat is an archetypical warbler with its vivid yellow throat and black bandit’s mask, bordered with silvery-white. These days, I find the yellowthroat unmistakable but it wasn’t that many years ago that I mistook one for a Kentucky warbler, another yellow bird with black around its face. As I look back at my blunder, which I quickly corrected with a check of my field guide, I have to laugh at myself, but I know that bird identification in the field is a lifelong learning process.

The call of the common yellowthroat is as distinctive as its appearance. The signature call of the male, described as “witchety-witchety-witchety,” is easily discerned from other sounds of the prairie. During a bird workshop last spring, I noticed that the song of the common yellowthroat became immediately familiar to beginning birders.

As a photographer, I appreciate the bold nature of the common yellowthroat. During early summer, they are intrepid, sometimes downright fearless, as they search for mates and defend their territory. Often, as I skulk along the trail with my cannon-like lens and camera, other birds head for cover while yellowthroats stand their ground among the prairie wildflowers and sing as if I’m not even there. It is during that window of time that I have captured my best images of the species, including the image here.

Another characteristic of the common yellowthroat that makes it amenable to photography is its propensity to forage on a variety of insects near the ground, or at least at eye level with the camera, often perching on colorful forbs, such as the spiderwort in the featured photo. Other warblers remain high in the trees, leaving the photographer with a disappointing belly shot with a bright-sky background.

As summer progresses, the common yellowthroat becomes more difficult to photograph as it is no longer distracted by courtship and territorial obligations. During that time I enjoy watching fledgling yellowthroats as they make their way around the prairie, awkwardly grasping stems of Indian grass with their clumsy claws. By the time they are ready to begin their first journey to southern wintering grounds, I can already see the telltale trace of a black mask on each young male.

After the common yellowthroats and other colorful birds of summer depart Shaw Nature Reserve for warmer climes, I begin watching for cold-tolerant visitors, such as dark-eyed juncos and yellow-rumped warblers. The new arrivals always bring their own interesting behaviors to keep me occupied during the harsh days of winter, but in the back of my mind I’m always thinking about the “witchety-witchety” of the spring to come.

—Story and photograph by Danny Brown

• 500mm lens + 1.4 teleconverter • f/5.6 • 1/200 sec • ISO 200

We help people discover nature through our online field guide.
Visit mdc.mo.gov/node/73 to learn more about Missouri's plants and animals.







Emmett and Leah Seat Memorial Conservation Area

Located in the ecological battle zone of the Upper Grand River basin, once-vast tallgrass prairie meets the western fringe of the eastern deciduous forests, resulting in an outdoor-lover's paradise.

SEAT MEMORIAL CONSERVATION Area was named after Emmett Seat and his wife, Leah, who donated their 439-acre farm to the Department in 1980. The Seat farm had been in the family since 1884, when Littleton Seat settled there. The family was dedicated to restoring the land to its historic, natural state. Since the first land donation, the area has grown to 3,479 acres, providing quality hunting and fishing opportunities in Gentry and Worth counties.

The Department continues the Seat family's vision on portions of the area by working to restore much of the native habitat that once covered this prairie landscape. Area staff manages for prairie, woodland, and forest habitats to appeal to a wide variety of wildlife and to area visitors. Native grasses and wildflowers thrive on ridge tops and gently sloping hillsides, while sycamore, walnut, ash, hackberry, and oak trees grow in bottomland forests along Big Muddy Creek. Open stands of bur oak woodland, reminiscent of pre-settlement days, grow along upland drainages throughout the area and the steeper hillsides along Big Muddy Creek in the southeast.

Seat Memorial Conservation Area is one of the Department's 19 Quail Emphasis Areas, areas managed intensively to provide quality year-round habitat for bobwhite quail. Visitors will notice extensive management efforts to rid the area of invasive plant species and restoration efforts for native prairie and woodland plant communities.



24-70mm lens • f/2.8 • 1/1600 sec • ISO 400 | by David Stonner

Other wildlife species that inhabit the area include turkey, deer, and a diverse array of grassland songbirds.

The area has an unstaffed archery range, including a walk-through archery range open year-round. The walk-through range leads archers through a 30-acre portion of the area with targets placed along a trail. The area is an especially popular destination for hunters and supports good populations of deer, turkey, rabbits, quail, and squirrels due to the creation and maintenance of diverse native grassland and woodland habitat. Eighteen fishable ponds dot the area, offering quality fishing opportunities for those anglers willing to walk area access trails to reach them.

To reach Seat Memorial Conservation Area, travel 11 miles north of Albany on Highway C, and then take Highway M approximately 4 miles east to Utah Avenue and the area's main entrance.

—Dave Hoover, area manager



Recreation opportunities: hunting, archery, fishing, and wildlife viewing.

Unique features: Open restored woodlands along Muddy Creek south of Highway M.

For More Information Call 816-271-3100 or visit mdc.mo.gov/a8026.

MDC



DISCOVER nature

To find more events near you, call your regional office (see Page 3), or visit mdc.mo.gov and choose your region.

BEES, BLOOMS & BOBWHITES

JUNE 11 • WEDNESDAY • 5:30–7:30 P.M.

Northeast Region, Randolph County

Registration required by June 9,

call Ted Seiler at 660-385-2616, ext. 118

All ages

Some of the best wildlife habitat in Missouri is on private land. Learn how native forbs add beauty to your property, while also feeding quail, bees, and other wildlife.



NATURALIST TRAINING SCHOOL

JUNE 12, 19 & 26 • THURSDAYS • 9 A.M.–4 P.M.

*St. Louis Region, St. Louis Regional Office,
2360 Hwy. D, St. Charles, Missouri 63304*

Registration required, call 636-441-4554

Ages 12–15

Thinking of a career in Conservation? Get a head start studying resources, working on projects, and job shadowing with the naturalists from Rockwoods Reservation and August A. Busch Memorial Conservation Area. Each session will be held at August A. Busch Memorial CA. The course is for students only and includes a project to be

presented on the final day, June 26. Parents are invited to attend project presentations.

Thursday, June 12: Birds and Herps

Thursday, June 19: Aquatics

Thursday, June 26: Trees and Forests

HERP-A-RAMA: COLD-BLOODED CRITTERS PROGRAM

JUNE 14 • SATURDAY • 10 A.M.–NOON

Northwest Region, Northwest Regional Office, 701 James McCarthy Drive, St. Joseph, Missouri 64507

No registration, call 816-271-3100 for information • All ages

Slither, crawl, or swim into the exciting world of Missouri's reptiles and amphibians. These cold-blooded animals are unique, diverse, and important to our ecosystem.



IDEAS FOR FAMILY FUN

Join us as we learn about these wonderful creatures and get an up-close look.

FATHER'S DAY CELEBRATION AND PUPPET SHOW

JUNE 14 • SATURDAY • 10 A.M.–2 P.M. FATHER'S DAY CELEBRATION, 1 P.M. PUPPET SHOW

Central Region, Runge Conservation Nature Center, 330 Commerce Drive, Jefferson City, Missouri 65102

No registration required

All ages

Make a date with your dad (or special person) and visit Runge Conservation Nature Center. Create a nature card and participate in a father and child(ren) nature center challenge! Do it together and receive a Peterson First Field Guide. Then enjoy a puppet show at 1 p.m. Skunk, Mole, and Snake are hungry after winter and are finding different things to eat. Join Runge's puppeteers to see if any of Missouri's animals can help the hungry big-mouthed frog find something to eat.

CONSERVATION KEEPERS: FAMILY FISHING

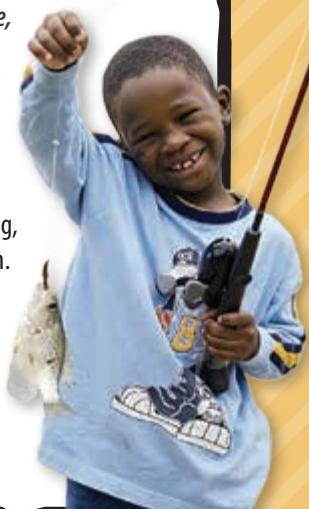
JUNE 21 • SATURDAY • 1 P.M.

Northeast Region, Conservation Department Northeast Regional Office, 3500 S. Baltimore, Kirksville, Missouri 63501

No registration

All ages

We'll practice the basics of fishing, including knot tying, bait, casting, and reeling in. Participants may borrow a pole or bring their own. Bait will be provided.



DISCOVER NATURE PHOTO CONTEST

Show the world your idea of discovering nature in Missouri. Using your Google+, Instagram, or Twitter account, tag your Missouri nature photos with "#MDCdiscovernature." Your photos will appear on our website at mdc.mo.gov/node/26255, where you can also read the contest rules. Every month, Department staff will select and post a winning photo. We'll publish all of the monthly winners in the January 2015 issue of the *Conservationist*.



Subscribe online • mdc.mo.gov/node/9087 • Free to Missouri households



I Am Conservation

Sixteen-year-old Chandler Doughten, of Jackson, was introduced to custom longbow making at a workshop held at the Cape Girardeau Conservation Nature Center. Doughten's instructor was Department of Conservation employee A.J. Hendershott. "I've always been interested in conservation, so my mom put me on the mailing list for the local nature center," said Doughten. "I saw the bow making class and decided to attend. I was instantly mesmerized by what A.J. taught." Hendershott said that making a bow is no easy task. "Some teens struggle with the physical aspects of the project," he said. "However, Chandler forged ahead, asking questions and applying what he was taught. He made a great bow." Doughten makes both longbows and recurve bows using all types of wood, many harvested from his family's property. "Each piece of wood has a different character," said Doughten, "and takes various amounts of time and types of work to make a good, functional bow." The Jackson High School sophomore has also become involved in other primitive crafts and skills, such as flint knapping, hide tanning, weaving, and tool construction. Hendershott said it takes a lot of dedication to achieve what Doughten has at such a young age. "When I see how excited he is to learn, it inspires me to do the same and expand my horizons even further," said Hendershott. When he graduates from high school, Doughten plans to attend a college with a good conservation program. "If A.J. is ready to retire, I'll apply for his job!" he said. —photograph by David Stonner